DOCUMENT RESUME

ED 171 078 EC 115 283

AUTHOR Wilson, Joy DeMarino
TITLE Coordination of an Education Department with Physical Therapy and Occupational Therapy Departments in a Residential Setting.
PUB DATE Apr 79
NOTE 17p.; Paper presented at the Annual International Convention, The Council for Exceptional Children (57th, Dallas, Texas, April 22-27, 1979, Session F-13)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cerebral Palsy; Custodial Mentally Handicapped; *Educational Programs; Mentally Handicapped; *Multiply Handicapped; *Occupational Therapy; Physically Handicapped; *Physical Therapy; *Program Development; *Residential Programs
IDENTIFIERS Texas

ABSTRACT

The paper focuses on coordination of an educational program for non-ambulatory cerebral palsied and profoundly retarded clients (21 years old and younger) in a residential setting not being served by the Texas Education Department. Covered in outline form are the school's requirements governing educational programs, program development, organization, coordination of education with physical and occupational therapy departments; and successful elements and major handicaps of the program. Outlines are also provided of physical therapy inservice, occupational therapy inservice, structural organization, therapeutic/training services provided, and the training sequence for assuming the kneel-standing position. (SBH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED171074

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

COORDINATION OF AN EDUCATION DEPARTMENT WITH PHYSICAL THERAPY AND OCCUPATIONAL THERAPY DEPARTMENTS IN A RESIDENTIAL SETTING

Joy DeMarino Wilson
P. O. Box 398
Richmond, TX
77469

57th Annual International Convention, The Council for Exceptional Children
Dallas, Texas, April 22-27, 1979 Session F-13

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

CEC

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EC 115283

Joy D Mann Wilson F31

COORDINATION OF AN EDUCATION DEPARTMENT WITH PHYSICAL THERAPY AND OCCUPATIONAL THERAPY DEPARTMENTS IN A RESIDENTIAL SETTING

I. PROBLEM:

A dormitory of 150 multi-handicapped individuals was not being served by the Education Department. The clients, who had little or no training history, were in need of programs designed exclusively for them. They were all non-ambulatory, most were victims of severe Cerebral Palsy, and profoundly retarded. Motor ability ranged from those able to walk with parallel bars to those without head control or body righting. A few of the clients had tertiary sensory handicaps while most suffered from respiratory problems resulting from their physical involvement.

The school's requirements governing educational programs were:

1. Daily services must be provided for residents 21 years and under.
2. Training areas must be determined on an individual basis.
3. All training must be written in behavioral terms to be reviewed by a Behavior Therapy Modification Committee.
4. Objective methods of measuring progress must be employed.
5. Data must be recorded daily and reported monthly in the resident's chart.
6. Terminal goals of training must be outlined at the initiation of the program.

For other populations within the institution, these guidelines were simple enough to meet. For this particular dormitory, they seemed monumental obstacles.

A staff of five, three teacher aides, one teacher, and one supervising teacher, were assigned to develop and provide services to 132 eligible residents.

II. PROGRAM DEVELOPMENT:

The school's consulting orthopedists and the staff physical therapists outlined the priority need of each individual resident. For approximately 40% of this population it was to maintain range of motion (ROM) and prevent further deformities. For another 30%, it was to maintain and develop gross motor abilities. All traditional educational goals were out of the question. Training had to start at their present level of achievement and in many cases that was at the very beginning of motor development.

Almost all of the dormitory's residents were already being seen by the Physical Therapy Department and therefore had individual treatment plans as well as being monitored periodically for maintenance of ROM. Presented with the extension of educational services, the Orthopedists suggested that the Physical Therapist train the staff in goniometry and handling techniques, utilizing them in much the same way as P.T. Technicians. Thus began the program. Extensive in-service training was provided by the Licensed Physical Therapists until they were confident of competence. (See Appendix I)

This in-service training also provided the means of meeting some of the education department requirements; the medical language of the Physical Therapists was used to develop behavioral descriptions of each training sequence that had to be written, goniometry in many cases was the chosen measurement of progress and data collection and terminal goals for each program could be determined with this newly achieved knowledge.

One by one the P.T.'s provided the education staff with modified versions of their treatment plans for each client until they felt comfortable that the education trainers could carry them out without harm. In order not to dilute the treatment plans to the extent that all therapeutic benefits would be eliminated it became apparent that staff training would have to be repeated periodically, thereby maintaining the necessary degree of competence. Adaptation of the physical therapy treatments met the Education Department's criteria for individualized services.

The Occupational Therapist on campus provided assistance primarily in the area of feeding training. In-service training in this area was given (see Appendix II) as well as assistance in determining appropriate individual goals. In some cases, adapted eating utensils were supplied for the residents and the staff was instructed in their use and care.

III. ORGANIZATION:

The logistics involved in program implementation was a major impediment. School regulations demanded daily services to each resident 21 years and under. With a staff to resident ratio of 1:33 (the supervising teacher did not work with the residents on a daily basis) training sessions were limited to a scant 15 minutes for the vast majority. (See Appendix III) For the most severely physically handicapped, this brief period was all that could be tolerated in one block; and considering the lack of training history for population in general, initiating the programs with longer sessions probably would have exceeded the overall tolerance level of the clients. It was unfortunate that sessions could not be lengthened as their capacity for stimulation increased.

IV. COORDINATION OF EDUCATION WITH PT AND OT:

Open lines of communication and close working relationships between departments were essential to successful operation. Only with these

key ingredients was the program able to evolve. The large number of physiotherapy related programs, shared equipment, and space contributed to the development of a more intimate assication between P.T. and Education than between Education and O.T. However, the most important factors were the intensive in-service which developed mutual confidence in staff competency, free guidance, willingness to accept and seek guidance, and the emergence of peer working relationships. These factors established a trust that the training staff would carry out programs only in the way they were instructed with absolutely no deviation. Their trust, in turn, gave the trainers the self-confidence to ask questions, seek suggestions, and eventually even to offer suggestions.

Over the course of time, the Education staff grew very familiar with the clients and their personalities. The limited working space forced the trainers to implement most of the programs in the dayrooms and bedrooms. This resulted in unforeseen benefits. They were able to observe the residents in unstructured situations, providing some insights that might otherwise have gone undetected. It became apparent in a lot of cases that there were other areas of potential that could be developed. In certain instances it was evident that stimulus control and non-contingent reinforcement were hindering progress, rather than the actual physical problems of the individuals. Again, because of the mutual trust and respect between departments, they were able to communicate these findings to each other.

It was then that the two areas started working more as a team. The educational programs expanded (See Appendix IV) to include more traditional areas, self-help language, fine and visual motor tasks, etc. P.T. still followed the same role regarding the physiotherapy related programs but the education staff was able to offer suggestions about methods of teaching some of the gross motor skills.

At the dissolution of this education program Behavior Modification techniques were just beginning to be used as a tool for implementation of the Orthopedic prescriptions. Heretofore, all physiotherapy programs were carried out using the medical model. This was completely appropriate for many, but with some of the higher gross motor skills it was not. The traditional method of doing it "to" the client or doing it "for" the client was not resulting in learning and self-initiation of the behavior. It did maintain the client's ability or potential at the same level and sometimes expanded it; it just did not lend itself to further development in most cases.

Treatment started in the same fashion, with the Medical Department's recommendations, but implementation was changing. Positive reinforcement, differential reinforcement shaping, discrimination training, and forward and backward chaining were utilized as teaching methods with the approval of the Physical Therapist. Skills were broken down into very small steps with intervention commencing at the present operant level of the client and terminal goals were set at independent performance of the sequence of small behaviors as one complete complex behavior.

V. CONCLUSION:

The program dissolved before the circle was complete. The P.T. and O.T. Departments imparted vital information from their areas of expertise. The Education Department was just beginning to apply their own area of expertise to the overall program. For this reason the end result is still in question.

In summation, the critical elements of success were:

1. Staff Development (In-service training).
2. Communication.
3. Peer working relationships.
4. Mutural respect and trust.

The major handicaps were:

1. Staff to client ratio.
2. Limited space and equipment.

For further information or feedback, please contact:

Joy DeMarino Wilson
P.O. Box 398
Richmond, Texas 77469

4/79

APPENDIX I

PHYSICAL THERAPY IN-SERVICE

A. GONIOMETRY COURSE

1. Anatomy of the Skeletal System (Day 1)

Objectives:

a. Learn the function of bones

b. Be able to locate and identify all major bones (metatarsals, calcaneous, tibia, fibula, femur, patella, ilium ischium, pubis, clavicle, sternum, humerus, radius, ulna, metacarpals, phalanges, vertebrae column, skull, scapula)

c. Be able to palpate major bony prominences used for measurement of joint range; evaluate alignment; know which are susceptible to pressure sore development

d. Be able to identify major joints; label these by type; know characteristics of each type

2. Measurement of Lower Extremity Joint Range of Motion (Day 2)

Objectives:

a. Know why joint range is measured

b. Identify a goniometer and its essential features

c. Define the following terminology:

Goniometer	Hip dislocation
Angle	Prosthesis
Plane -	Gait
Frontal	Alignment
Saggital	Stabilize
Horizontal	Midline
Axis of Motion	Hamstrings
Degrees of Motion	Hip flexors
Protractor	Active Motion -
Contracture	voluntary/involuntary
Anatomical Position	"WNL"
Passive Motion	Flexion
Resistance to	Rotation -
Passive Motion	internal/external
Extension	Adduction
Plantar Flexion	Abduction
Dorsiflexion	Pronation (of foot)
Inversion	Supination (of foot)
Eversion	Bony Landmark
Joint Axis	

d. Palpate the following bony landmarks:

Greater Trochanter
Lateral & Medial Condyles of the Knee
Lateral & Medial Malleolus
Anterior Superior Iliac Spine
Posterior Superior Iliac Spine
Femur
Tibia
Fibula

e. Locate the axis of rotation in the following joint motions:
   Hip: flexion, extension, hyperextension, abduction, adduction, internal/external rotation
   Knee: flexion, extension
   Ankle: dorsiflexion, plantar flexion
f. Locate the axis of joint motion used in measurement of hip flexor/hamstring tightness
g. Know normal joint range for all listed in "e" and "f"
h. Use a goniometer to measure the above listed ranges by:
   Palpating bony landmarks
   Placing goniometer correctly
   Stimulating the appropriate motion, verbally, actively, or passively
   Checking alignment of goniometer
   Reading results
   Recording results, including additional pertintent data
i. List possible limiting factors of normal range and conditions affecting measurement

3. Practice and Examination (Day 3)
   a. Written Examination
   b. Pracitce measuring with a goniometer
   c. Practical Examination

B. SENSORY-MOTOR TREATMENT IN THE DEVELOPMENTAL DISABILITIES
1. Lecture and Discussion
   a. Basics of Neurodevelopment
   b. Basics of Gross Motor Development
   c. Other Principles of Motor Learning
   d. Summary of Reflex-Motor Development
   e. Problems of Abnormal Development
   f. Cerebral Palsy
2. Instruction, Demonstration and Practice (Days 2 and 3)
   a. Treatment Principles
   b. Handling Techniques
   c. Methods of Handling Not Recommended and Why
   d. Inhibition Techniques
   e. Facilitation Techniques

APPENDIX II

OCCUPATIONAL THERAPY IN-SERVICE

A. DIRECTIONAL TRAINING FOR FEEDING SKILLS
   1. Combined Motions
   2. Specific Motions
      a. Horizontal adduction
      b. Horizontal abduction
      c. Elbow extension and flexion with associated shoulder movements
      d. Grasp and release

B. NORMAL DEVELOPMENTAL SEQUENCE ASSOCIATED WITH FEEDING
   Birth to 14 years

C. FEEDING AND THE HANDICAPPED CHILD
   1. Positioning
   2. Drinking
   3. Chewing
   4. Hand-to-Mouth Motion
   5. Eating with a Spoon
   6. Spoons, Forks, and Knives

APPENDIX III

STRUCTURAL ORGANIZATION

A. TIME
   1. 8:00 a.m. to 8:30 a.m. - Planning and Preparation
   2. 8:30 a.m. to 11:30 a.m. - Divided into 15 minute sessions for all types of training other than Feeding (one 15 minutes break for staff)
   3. 11:30 a.m. to 1:00 p.m. - Feeding training
   4. 1:00 p.m. to 2:00 p.m. - Staff lunch break
   5. 2:00 p.m. to 4:30 p.m. - Divided into 15 minute sessions for all types of training other than Feeding (one 15 minutes break for staff)
   6. 4:30 p.m. to 5:00 p.m. - Planning and Clean-up

B. STAFF
   1. Divided into two teams of two. (This was done to insure that someone was always available to assist or to obtain extra assistance. It also kept morale high and communication flowing.)
      Team assignments:
      a. The strongest team was assigned to the largest residents as liftingand physical manipulation were required for most programs
      b. Teams and team members rotated throughout the day to allow all staff members a chance to work together and to carry out a variety of different programs. (This proved valuable when a staff member was absent)
      c. Each day the same schedule was carried out to try to develop a rapport between the trainer and the resident and to provide continuity of services
   2. At lunch the residents were gathered in a group in one area and the trainers worked with only one resident at a time

C. RESIDENTS
   Scheduled according to:
   1. Living Area
   2. Type of Training Program
   3. Amount of Physical Assistance Needed

   (Following the above considerations made it possible to group some residents together and thereby extend their allotted time beyond the 15 minutes, unless contraindicated)

APPENDIX IV

THERAPEUTIC/TRAINING SERVICES PROVIDED

A. GENERAL GOALS
   1. To maintain, develop and increase physical growth through basic Physical Therapy and Occupational Therapy handling techniques
   2. To develop a greater awareness of the surrounding environment
   3. To prepare some clients for possible placement in instructional classes for skill development
   4. To increase independence in self-help areas

B. RANGE OF MOTION
   1. Static Positioning (approx. 30% pop.)
      10 Positions
   2. Body Relaxation (approx. 10% pop.)
      8 Techniques

C. GROSS MOTOR DEVELOPMENT
   (approx. 30% pop.)
   1. Head Control
   2. Protective Extension
   3. Segmental Rolling
   4. Sitting (independently or with assistance)
   5. Assumes/Maintains Side-Sitting
   6. Assumes/Maintains Kneel-Standing
   7. Maintains Standing with Support
   8. Four-Point Crawl
   9. Bearing Weight on a Tilt Table
   10. Walking with Parallel Bars
   11. Mobility Training (one semi-ambulatory, blind resident)
   12. Gross Motor Imitation with the Upper Extremities

D. PRE-FEEDING AND FEEDING
   (approx. 11% pop.)
   1. Prevent Weight Loss
   2. Develop Maximum Sucking Potential
   3. Increase ROM Necessary for Self-feeding
   4. Inhibit Suck
   5. Independent Hand-to-Mouth Finger Feeding
   6. Using Spoon and Cup Independently
   7. Eating Without Supervision

E. FINE AND VISUAL MOTOR TASKS
   (approx. 8% pop.)
   As a prerequisite for placement in an instructional task
   1. Object Placement
   2. Ring Stack
   3. Puzzle Assemby - simple, non-interlocking

F. DRESSING
   (approx. 2% pop.)

G. REDUCTION OF DYSFUNCTIONAL BEHAVIOR
   (approx. 2% of pop.)

H. LANGUAGE
(approx. 2% pop)
1. Imitation
2. Increasing Tolerance of Phonic Ear

I. SOCIAL INTERACTION
(approx. 2% pop.)

J. ORAL HYGIENE
(approx. 1% pop.)

*In approximately 2% ot he population handling was medically contraindicated

RICHMOND STATE SCHOOL
DEPARTMENT OF EDUCATION AND TRAINING
TRAINING SEQUENCE

PROGRAM: Assuming Kneel-Standing Position

Program Writer: Joy DeMarino

DATES:

Sessions to Completion:

BCP Strands:

Behavioral Definitions:

Client will independently assume a kneel-standing position from a supine position, response initiated within 5 seconds of command.

Kneel-Standing Position is client bearing weight on both knees with knees in 90° flexion, slightly abducted and in neutral rotation, hips level and in same plane as shoulders. (see figure 1)

figure 1: Kneel-Standing

Terminal Behaviors:

Client will assume kneel-standing position independently and maintain for 15 minutes without support for five consecutive sessions. Response initiated within 5 seconds of command.

Purpose of Program:

To increase gross motor skills; increase balance and trunk control; increase use of arms; give client some degree of independence.

Pre-Entry Requirements:

Mobility of arms and legs; capability of bearing weight on knees; capability to support self on extended arms; capability to segmentally roll. Recommendation of P.T./Orthopedist.

Setting:

On a mat on client's living unit or classroom.

Materials and Apparatus:

Mat, wall or table to use for support when first achieving kneel-standing position, data sheets, reinforcers, watch or clock with second hand.

Reinforcers:

Social, edible, visual, tactile, and auditory reinforcers.

Schedule of Reinforcement:

CRF gradually stretched to VI4 minutes.

Baseline Data and Procedure:

Baseline will run three consecutive sessions or until data stabilizes. Each session will consist of a minimum of 10 trials but no more than 20. Each phase of program will be baselined. (see Task Analysis) If client responds at 0% accuracy for two consecutive phases, the following phases will not be baselined (as task analysis uses a forward chaining process). No prompts or reinforcement will be available during baseline. Data will be collected as follows:

(+) will indicate correct response initiated within 5 seconds of appropriate command.
(-) will indicate incorrect response initiated within 5 seconds of appropriate command.
(0) will indicate no task-related response initiated within 5 seconds of appropriate command.

(# of secs. and/or min.) will indicate duration of maintenance of position - appropriate only to Phases IV and V.

Intervention Data and Procedure:

Each session will consist of a minimum of ten trials but not more than twenty, until Phase IV & V are initiated, at which point sessions will be time based. (number of trials will be dependent upon duration of response). Procedures to be used in training as well as criteria for moving from one phase to the next are described in Task Analysis. Terminal criteria is client independently assuming kneel-standing position from a supine position and maintaining for 15 minutes for five consecutive sessions on a VI 4 minute schedule of reinforcement.

Task Analysis:

If prompts are used at any point during program they will be systematically faded by A) decreasing amount of assistance in prompting, B) reinforcing prompted responses less effectively, C) reinforcing less frequently.

Phase I:

Client is positioned supine on mat. Command will be given: "_____, roll over". Client will roll to one side of body independently, response initiated within 5 seconds of command. Initially client will be required to maintain position on side for only one second. The duration of response will be gradually increased to five seconds. Client will respond at 90%-100% accuracy for three consecutive sessions before proceeding to Phase II.

Phase II:

Same procedure as in Phase I. Once client has achieved side-lying position, knees should be flexed 80°- 100° (approximately) and hips flexed 35° (approximately). Initially client will be required to maintain this position for only one second. The duration of response will gradually be increased to th ree seconds. Client will respond at 90%-100% accuracy for three consecutive sessions.

Phase III:

Same procedure as in Phase II. Once client has achieved position described in Phase II, client will raise self on elbow with hand of same arm on mat (palm down). This arm is same arm that client was lying on in side-lying position. Rest of body is still positioned in same manner. The client's other hand may rest on mat for additional support. Position will be maintained for at least 3 seconds. Client will respond at 90%-100% accuracy for three consecutive sessions.

Phase IV:

Same procedure as in Phase III. Command will be given: "_____, sit up." Once client has achieved position described in Phase III, they will raise from supporting weight on elbow to supporting weight on extended arm into a side-sitting position. (See figure 2)

figure 2: Side-sitting

Client will maintain side-sitting position for one minute. Client will respond at 90%-100% accuracy for three consecutive sessions.

Phase V:

Same procedure as in Phase IV. Command will be given "_____, stand on your knees". Once client has achieved side-sitting position they will raise to kneel-standing position. When achieving kneel-standing position, client may first have to assume a position similar to that in figure 3.

figure 3: forerunner to kneel-standing

From position shown in figure 3, client will raise trunk to achieve kneel-standing position (figure 5). If client is unsteady after achieving kneel-standing position, assistance can be given by placing downward pressure on hips as illustrated in figure 4. Trainer may also find it necessary to position client near a piece of furniture (padded for protection) for additional support.

figure 4: Facilitating independent kneel-standing

figure 5: Independent Kneel-Standing

Terminal criteria is client achieving kneel-standing position independently, response initiated within 5 seconds of command, and client maintaining position for 15 minutes for five consecutive days on a VI 4 minute schedule of reinforcement.

Note: A probe should be run to determine whether or not client can reverse this process and regain supine position. If not, then the Task Analysis should be reversed to achieve this goal.

:dr
12/78